

- Bellamy, D. J., P. H. Clarke, D. M. John, D. Jones, A. Wittick, and T. Darke. 1967. Effect of pollution from Torrey Canyon on littoral and sublittoral ecosystems. *Nature* 216: 1170-1173.
- Boney, A. D. 1968. Experiments with some detergents and certain intertidal algae. In J. D. Carthy and Don R. Arthur, Ed., *The Biological Effects of Oil Pollution on Littoral Communities. Field Stud. Council 2 (Suppl.)* pp. 55-72.
- California Air Resources Board. 1969a. *California Air Quality Data for September, October, November 1968*. Vol. 1 No. 1. Multilith 28 pp.
- . 1969b. *California Air Quality Data for December 1968, January and February, 1969*. Vol. 1. No. 2. Multilith 27 pp.
- . 1969c. *California Air Quality Data for March, April, and May 1969*. Vol. 1. No. 3. Multilith 28 pp.
- . 1969d. *California Air Quality Data for June, July and August, 1969*. Vol. 1. No. 4. Multilith 29 pp.
- Cowell, E. B. 1969. The effects of oil pollution on salt-marsh communities in Pembrokeshire and Cornwall. *J. Appl. Ecology* 6: 133-142.
- Dawson, E. Yale. 1959a. A primary report on the benthic marine flora of southern California In Oceanographic Survey of the Continental Shelf Area of Southern California pp. 169-218. *State Water Pollution Control Board*, Pub. No. 20. Sacramento, California.
- . 1959b. Benthic marine vegetation. *Ibid.* pp. 219-264.
- . 1961. A guide to the literature and distributions of Pacific benthic algae from Alaska to the Galapagos Islands. *Pacific Sci.* 15: 370-461.
- . 1965a. [not signed] Chapter 8 Intertidal algae In *An Oceanographic and Biological Survey of the Southern California Mainland Shelf* pp. 220-231. *State Water Quality Control Board*, Pub. No. 27. Sacramento, California.
- . 1965b. Table IX. *Ibid.* Appendix Data pp. 351-438.
- Emery, K. O. 1960. *The Sea off Southern California* Wiley & Sons, New York. 366 pp.
- Okamura, K., S. Oeda, and Y. Miyake. 1926. On the harmful action of deep fog on *Porphyra tenera* Kjellm. *J. Imp. Fish. Inst.* 21(6): 67-68. [In Japanese. Authors' English abstract *Bios. Abs.* 1: 43. 1927]
- Regional Water Pollution Control Board No. 4. Los Angeles Region. State of California Resources Agency. 1965. Report on Monitoring Programs in Santa Monica Bay January 1 through December 31, 1964. Mimeograph 27 pp., 2 Appendices.
- Rittenberg, S. C., T. Mittwer and D. Ivler. 1958. Coliform bacteria around three marine sewage outfalls. *Limnol. Oceanogr.* 3: 101-108.
- Scheffer, W. W. 1969. *Statistics for the Biological Sciences*. Addison-Wesley, Reading, Massachusetts. 231 pp.
- Stevenson, R. E. 1959. The marine climate of southern California In Oceanographic Survey of the Continental Shelf Area of Southern California pp. 7-58. *State Water Quality Control Board*, Pub. No. 20. Sacramento, California.
- U. S. Weather Bureau. 1962. *Decennial Census of United States Climate*. Summary of Hourly Observations. Climatography of the United States 82-4 Los Angeles, California, International Airport 1951-60. 10 pp.

Accepted for publication September 26, 1970.

BULLETIN SO. CALIF. ACADEMY OF SCIENCES 70(1): 16-17, 1971

A NEW SPECIES OF *SIMOPELTA* FROM COSTA RICA  
(Hymenoptera: Formicidae)

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ABSTRACT: *Simopelta paeminosa*, new species, is described from Puntarenas Province, Costa Rica. Diagnostic features of this species are: tridentate mandibles with acute basal tooth; no median clypeal spine; rugose cephalic and alitrunk integument. This species appears to be most closely allied to *S. williamsi* of Ecuador.

The ponerine genus *Simopelta* was reviewed by Gotwald and Brown (1966), who discussed the generic characters, listed the known species and

described two new species. They also published

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observations on the behavior of *S. oculata* Gotwald and Brown made by Brown in Costa Rica. These observations reaffirmed the army antlike behavior of the foraging workers.

The following new species from Costa Rica was included in a vial containing three workers, two males and one mangled larva of *Gnamptogenys simplex* (Emery). The two males are not fully colored and one has the wings torn off on one side. It seems likely that the *Gnamptogenys* represent the prey of the *Simopelta*; unfortunately, the collector after three years, was unable to recall details of the collection.

***Simopelta paeminosa*, new species**

Figure 1

*Diagnosis.* Clypeus without median spine; eyes small; mandibles tridentate, basal tooth acute; head, alitrunk and petiole coarsely rugose; integument blackish brown.

*Holotype* worker: TL 4.1; HL (occipital margin to anterior border of frontal lobes) 0.9; HW (without eyes) 0.7; WL 1.5; greatest diameter of eye 0.06; scape L (chord, without basal neck) 0.8 mm; CI 81. Abbreviations and measurements as in Brown (1958).

Similar to worker of *S. williamsi* but differing as follows:

1. Mandibles more slender, the basal tooth acute.
2. Antennal scapes longer; in full face view, extending beyond occipital margin by about twice the apical breadth.
3. Petiolar node longer, about as high as long.
4. Rugulae of head and alitrunk not transversely oriented. In *S. williamsi*, those of the occiput and pronotum, especially, are decidedly transverse; in *S. paeminosa* the rugulae are very irregular, mostly oblique, though a few may be partially or wholly transverse. The gaster is shiny, with well separated distinct punctures.

*Paratype* series. Variation in ten randomly selected individuals, but including apparently largest and smallest specimens: TL 3.8-4.2; HL 0.90-0.95; HW 0.70-0.73; ML 0.43-0.50; WL 1.40-1.50 mm; CI 71-81.

Color, basically blackish brown, mandibles, flagellum, legs brownish. Pronotum with brownish areas of irregular extent. Gastric apex light brownish.

*Holotype* and 21 *paratype* workers, 4 mi south of San Vito de Java, Puntarenas Province, Costa

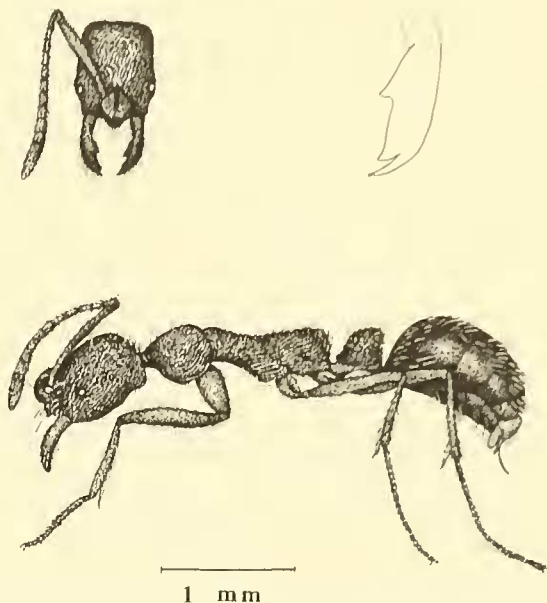


Figure 1. *Simopelta paeminosa*, new species. Above, head in frontal view and enlarged outline of mandible. Below, lateral aspect. Figures by Ruth Ann DeNicola.

Rica, 15 August 1967 (R. W. McDiarmid). *Holotype* and most *paratypes* in the Natural History Museum of Los Angeles County. *Paratypes* deposited in American Museum of Natural History and Museum of Comparative Zoology.

*Etymology.* *Paeminosus*, L., rough or uneven, in allusion to the roughened integument.

The rugose integument of this species seems to indicate a relationship to *S. williamsi*. That Ecuadorian species, however, has the rugulae transverse on the occiput and dorsum of the alitrunk. In *S. williamsi*, too, the basal tooth of the mandible is truncate rather than acute.

In the key to *Simopelta* workers by Godwald and Brown, *S. paeminosa* fails at couplet 5 since it does not accord with either alternative. The other Central American species are punctate rather than rugulose.

LITERATURE CITED

Gotwald, W. H., Jr. and W. L. Brown, Jr. 1966. The ant genus *Simopelta*. *Psyche*, 73: 261-277.

Accepted for publication September 25, 1970.